to the mesenteric insertion, where the gut was of the normal rosy color, and in marked contrast with the brownish tint of the remainder of the viscus. Billroth's method of clamping was employed, the intervening portion, about six centimetres in length, resected with the straight scissors. After antiseptic washing of the intestine, the mucous layer was united by means of an overcast suture, after fastening the mesenteric border in the same manner, by which means complete hemostasis was obtained. The material used was Lister's catgut (No. 1). The serous and muscular coats were united by Lembert's suture, leaving five millimetres of the sero-muscular coat between the entrance and exit of the needle. The intestine was replaced in the abdomen, the walls of the hernial sac drawn together with a catgut suture and the sac resected at the distance of a centimetre from the suture, together with a second continuous buried suture. The post-operative course of the case was favorable, and, beyond slight vomiting from the chloroform there was nothing of importance observed. On the sixth day a hard and painful stool was passed, and, on the eighth day of continuous apyrexia the sutures were removed, and on the fourteenth day after the operation the patient left the hospital without a truss. She was seen again a month after and a solid cicatrix and good health reported.—*Gazzetta Medica Lombarda*, 1891.

FRANK H. PRITCHARD (Norwalk, O.).

IV. Report of Eight Cases of Cholecystotomy, with Remarks upon Technique. By Dr. ARTHUR T. CABOT (Boston). The author first mentions the difficulty of dislodging stones from narrow ducts. To overcome this he suggests the use of a narrow loop of wire, small enough to slip along a narrow duct, having its outer surface rounded and smooth, while the inner edge is somewhat sharp, so that it may hold on to the calculus, when it has once been passed beyond it. He next mentions the embarrassments that attend attempts to incise the walls of a deep-lying duct for the evacuation of a calculus more or less movable, while important organs and vessels are lying close about the duct to be incised. He suggests the use of

a small hook, the point somewhat sharper than that of an ordinary aneurism needle, the inside edge of the hook being sharp. The point of such a hook can be rubbed through the wall of the duct down on to the stone, and then a slight traction on the hook will make it cut its way out and slit up the duct sufficiently for the easy removal of the stone.

The following is an abstract of his eight cases:

CASE I.—Female, aged thirty-eight, had a distended gall bladder from which, on September 30, 1891, four good-sized stones were removed. The walls of the gall bladder were stitched to the parietal peritonæum. Recovery without fistula.

CASE II.—A delicate woman of twenty-nine had an abscess in and about the gall bladder, caused by the presence of a large number of stones. This was opened and the walls of the gall bladder were stitched to the parietal peritonæum on December 9, 1891. The cavity about the gall bladder was an irregular one, and no stones were found at the time of the operation. After the operation many stones were discharged through the opening, and now, almost a year later, the fistula still discharges a glairy fluid. No stones have been discharged for a number of months.

CASE III.—Female, fifty years of age. Since May, 1891, has had twenty or more severe attacks of jaundice. When seen by the reporter she was rather thin, very much jaundiced, with a dry skin; the stools were clay-colored, and the urine was dark and contained much bile. Palpation showed doubtful resistance at the seat of the gall bladder. There seemed to be a mass there, indistinct, which moved up and down with the liver. Percussion showed the liver to be decidedly enlarged downward.

The operation was done on May 17, 1892. Oblique incision, just below the lower edge of the liver. Gall bladder found in a contracted condition, and opened. One stone was removed from it, and another stone was felt farther along, at the junction of the cystic and the common duct. Between the gall bladder and this second stone the duct was quite narrow. After dilating it as far as possible, many

attempts were made to remove the stone with forceps, and finally it was dislodged and pulled forward with a wire loop. It broke during manipulation, and was removed in two pieces. The gall bladder was stitched to the parietal peritonæum with catgut, and two anchoring stitches of silk. A tube was placed in the gall bladder.

The recovery of this patient was uneventful. The jaundice slowly disappeared, and it was not until June 13 that the stools began to show a decided color. On June 25 the sinus was finally closed. She has since remained perfectly well.

CASE IV.—A spare woman of fifty-one. Three or four years before she had occasional attacks of pain, referred to the right side. Two years ago she had a double ovariotomy for dermoid cysts, and made a good recovery. Eight or nine weeks later she had an attack of pain in the region of the liver, with moderate jaundice. This was somewhat more severe than in previous attacks, and she had chills and a high temperature with it. At the time that she began to grow better from this attacks he vomited what seemed to be pus. She was then well until November, 1891, when she again had chills and high temperature. Jaundice soon developed, and persisted from that time. Through the winter she had her ups and downs, but on the whole she lost flesh and the power of taking food. When seen in June, 1892, she was deeply icteric; the liver was small, with nothing to feel, and no sensitiveness to superficial pressure; but on deep pressure beneath the cystic notch, if a long breath was taken at the same time, a tender spot was reached.

Incision parallel to and below the edge of the liver. The gall bladder was much shrunken. The stone which was causing the trouble was found impacted in the common duct, close down to the duodenum. Much difficulty was found in so exposing the parts that this duct could be incised and the stone removed. It was finally accomplished, however, and a drainage tube was placed in the cavity from which it had come, with gauze packed around it to protect the general peritoneal cavity from the invasion of bile. The operation was a difficult one on account of the depth at which the stone lay.

At the end of the operation there was an escape of fluid through the tube which was placed in the cavity, which suggested duodenal contents. She died the fourth day after the operation, from tetanus.

There was much pain and distention of the bowels, suggesting peritonitis. The discharge through the tube on the first day resembled bowel contents, but after that there was a large escape of bile up to the time of death.

CASE V.—A man of sixty-two. One year before entering hospital he began to have icterus, with "flashes of pain" in the region of the umbilicus. During the three weeks before he came to the hospital he had about a dozen sharp attacks of pain in the right hypochondrium, each one of which lasted from five to six hours. His stools during this time became very white (clay-colored), and the jaundice at the time of entrance was extreme.

Examination showed an irregular extent of resistance below the liver, not easily defined through a stiff and rigid abdominal wall. There was tenderness in this region. The urine was dark, with a specific gravity of 1.011. It contained some granular casts, stained with bile pigment. Operation July 23, 1892. The omentum was found adherent to the parts about the gall bladder, which was much shrunken, and lay far under the liver. It was opened, and many small stones were removed. The cystic duct was impervious to a fine probe. A farther search was made, as what had been found up to this time did not account for the jaundice, and a large stone was felt in the hepatic duct well back in the liver. With much difficulty an opening was finally made into this duct, and the finger was introduced. The stone could be felt, but it was very difficult to catch it, as it escaped out of reach into the much dilated hepatic duct each time that an effort was made to seize it. Finally it was caught with forceps, and broke in the effort to extract it. The pieces, as far as possible, were washed out, Both the gall bladder and the hepatic duct were drained by tubes, and gauze was packed around them close down to the opening.

He made a slow recovery, there being much trouble from pro-

trusion of a portion of the transverse colon through the wound. This was finally, however, controlled: and on August 17 his stools began to have a little color. From this time he recovered rapidly, and was discharged early in September entirely well.

CASE VI.—Male, aged seventy-two, entered the Massachusetts General Hospital July 29, 1892. His illness began two years before, with an intermittent, dull pain in the hepatic region. Later, gastric distress after eating appeared, with great loss of strength. Soon this epigastric pain became quite severe, and was followed by vomiting. The vomitus was often streaked with dark matter. Since April of this year he had had frequent attacks of abdominal distension, relieved by belching of wind and vomiting. He lost about fifty-seven pounds weight. Three weeks before entrance a yellowness of the skin was noticed, and in three days he had become intensely jaundiced, which condition continued: he was very much troubled by pruritus, and the stools were clay-colored. There was constant tenderness and pain in the hepatic region, and immediately after taking food. He had in addition a sharp epigastric pain, which was usually relieved by vomiting. On examination the liver was found to be somewhat enlarged, but no defined tumor could be made out. Although it was felt to be a case of probable malignant disease, an exploratory operation was advised, and this was done on August 4. The usual incision was made, and after separating some adhesions the gall bladder was readily found. It was examined externally first without anything being discovered. An opening was then made into it, and the interior of it and of the duct was thoroughly explored, but no stone could be found. There was a nodular feeling at the lower part of the gall bladder, and one or two little masses could be felt outside of it and in the loose tissues about. A tube was placed in the gall bladder and the wound was closed. Everything went well in relation to the wound, yet the patient continued to have pain and difficulty in keeping down any food, steadily lost strength, presently developed a persistent hiccough, and died August 14.

CASE VII.—Female, aged forty, entered the Massachusetts Gen-

eral Hospital July 27, 1892. For three years she had been subject to attacks of pain in the region of the liver, these attacks being accompanied by jaundice. For two years she had an attack about once a fortnight, and, latterly, these attacks had come very frequently, there having been three during the fortnight before entrance. Her attacks were frequently accompanied by vomiting and always by rise of temperature. After her entrance into the hospital the attack with which she entered subsided. On August 1, the operation being delayed while waiting for an instrument, she gradually got better, and by August 10 the icterus had almost wholly disappeared. It being thought that these attacks were due to a stone in the gall bladder, it was deemed wise to operate between the attacks. This was done on August 11.

The incision was made in the usual place. The gall bladder was found shrunken. Nothing could be felt in it, and on opening it a few little disintegrated portions of what appeared to have been a stone, were found. No stone of any size could be felt in any of the ducts. A drainage tube was placed in the gall bladder, and the wound was closed down to the tube. She made a good recovery from this operation, but her convalescence was considerably retarded by bronchitis, with dullness at the base of one lung.

CASE VIII.—A spare woman, fifty-nine years of age, entered the Massachusetts General Hospital August 9, 1892, with the following history:

Twenty-five years before she had an attack of hepatic colic. Since then, at intervals, she had had numerous similar attacks. Two months ago a severe attack began, accompanied at first by vomiting, later with chills and considerable fever. Since then she had had a steady, dull pain in the right hypochondrium and back. She was somewhat jaundiced at first, but this had gradually disappeared, the stools being now of a good color. The temperature, however, and pain persisted. It was deemed wise to operate. There was slight tenderness felt in the right hypochondrium, with some resistance, but nothing definite could be made out. The operation was done on

August 10 with the usual incision. The gall bladder was found nearer the middle line of the abdomen than usual. It was much shrunken. It was incised, and about forty small stones were removed from it. The cystic duct was found to be impervious just at its exit from the gall bladder. In the cystic duct just beyond, pressing against its junction with the hepatic duct, was another stone, larger than any of those just removed. With the sharp hook the duct was opened down onto this stone and it removed. This operation with the hook was very easy. The opening into the gall bladder was then sewed up, and a tube was introduced into the cavity from which this last stone was removed. Gauze was packed around this and the abdominal wound was closed down onto the tube and gauze.

On the next morning the patient's temperature had fallen to normal, and she made a good recovery, somewhat prolonged owing to a persistent bronchitis.

In most of these cases, as will be seen, the gall bladder was shrunken, and could not be felt before the operation. The decision for, or against, interference had to be made from the symptoms, therefore, unaided by physical signs.

The author remarks that, judging from the cases that he has operated upon, and from those of which he has had knowledge, it makes less difference than one would suppose, whether the gall bladder is drawn up and stitched to the abdominal wall or not.

If adequate drainage is provided for the bile, the cases in which openings are made into the deep-lying ducts do well, and the bile does not exert any very irritating action upon the peritonæum with which it comes in contact. When, however, the gall bladder can be drawn up to the surface, it is well to stitch the opening into the wound and thus shut it off from the peritoneal cavity. When this is done, he thinks it important to sew the gall bladder to the parietal peritonæum rather than to the skin. In this way there is less liability to the formation of a persistent fistula; for if there is a deep wound through the abdominal wall above the wound in the gall bladder, there is a better chance for granulations to close across the

opening than there is when the edges of the gall bladder are drawn up to the edge of the skin, as in this way the surface from which granulations can grow is much curtailed.

In these cases he has always followed the rule of providing drainage for the gall bladder, and has not attempted to at once close the wound in its wall by suture.—*Boston Medical and Surgical Journal*, December 8, 1892.

V. Multiple Echinococci in the Abdominal Cavity. By Dr. A. WESTHOFF (Greifswald). Two of the seven cases observed at the clinic are of considerable interest. The first, a laborer, had a large echinococcus cyst of the right lobe of the liver, which had been evacuated by a transverse incision below the costal arch. After two months' treatment by drainage he was discharged with a fistula, and was readmitted to the hospital six months later. The fistula still persisted, and it had discharged vesicles shortly before his readmission. There was now present a marked enlargement of the left lobe, but no tumor could be made out. The abdomen was opened in the linea alba and the liver was found greatly swollen and œdematous. Elastic tension at one place suggested, however, the existence of a parenchymatous cyst of the liver, and a portion of the processus ensiformis was resected to allow this spot to be brought up and sutured in the abdominal wound. A few days later exploratory puncture revealed pus at a considerable depth and the liver tissue was cut into with a Paquelin cautery knife until a large suppurating echinococcus cyst was opened. This was drained, and the cavity was completely closed by the end of three months.

The second case was a farmer, aged forty years, who suffered from continual and obstinate constipation. His stomach was much swollen and painful; he had intense headache and anorexia, and his general condition had greatly deteriorated. His symptoms only dated back about three weeks. After evacuation of the bowels, the abdomen being less distended, a large tumor could be felt both below the left lobe of the liver and behind the symphysis, and the diagnosis of multiple echinococci cysts was made some days later, when some